

Fig. 1

Schematic vertical cavity top surface emitting laser structure.

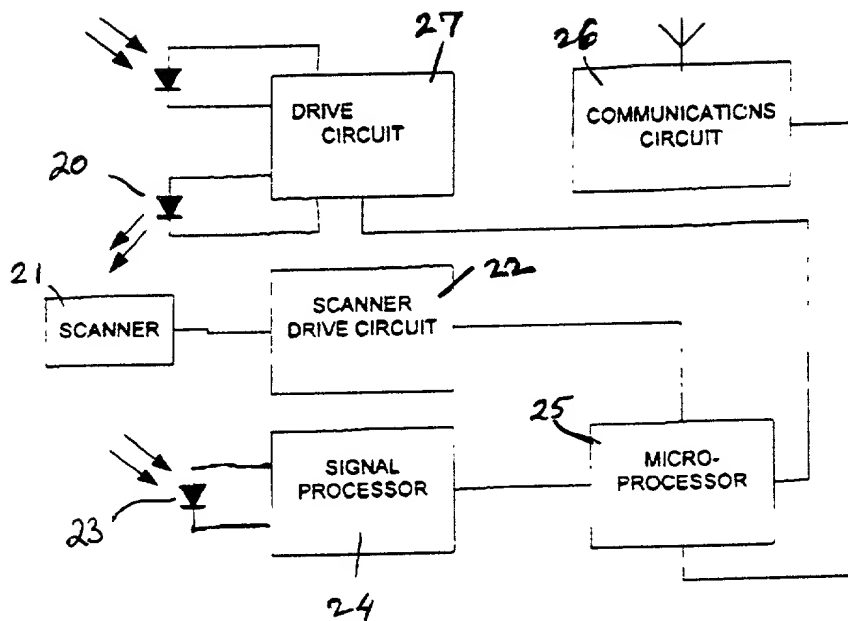


FIG. 2

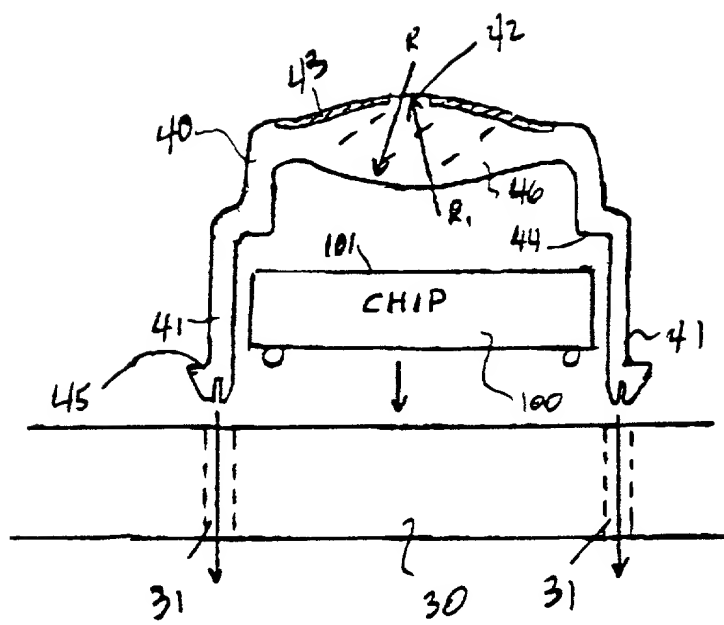
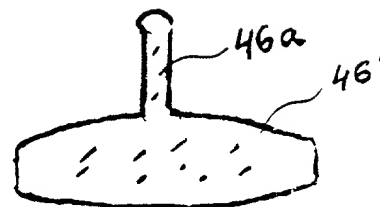
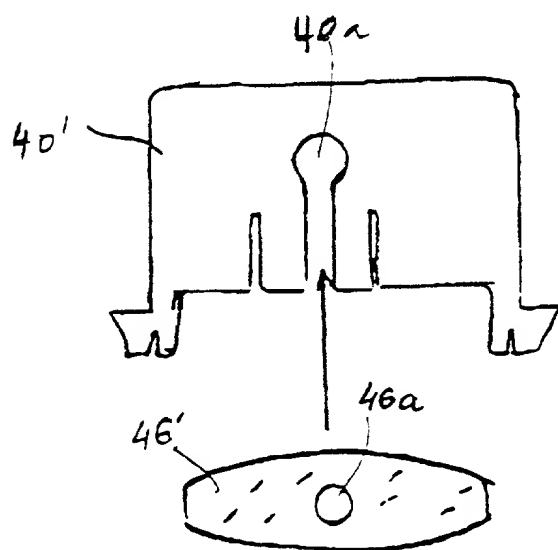
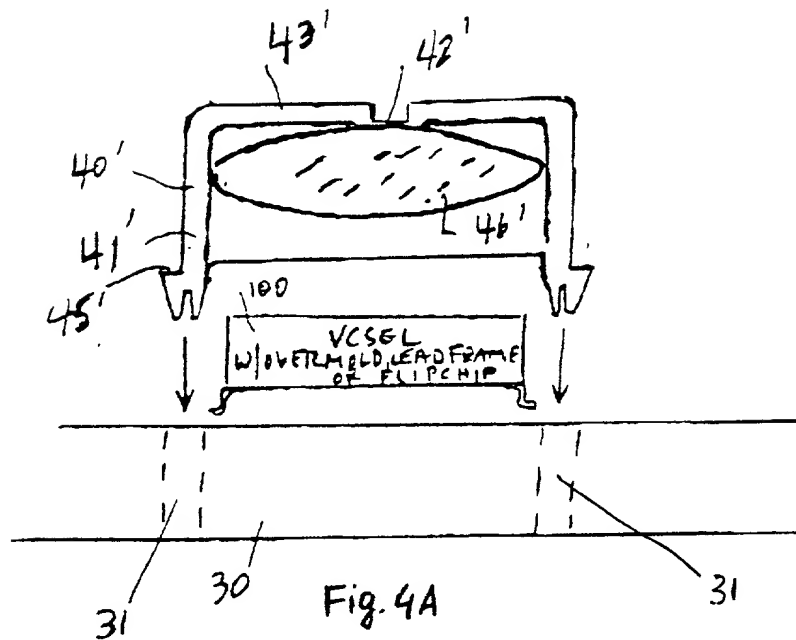


Fig.3



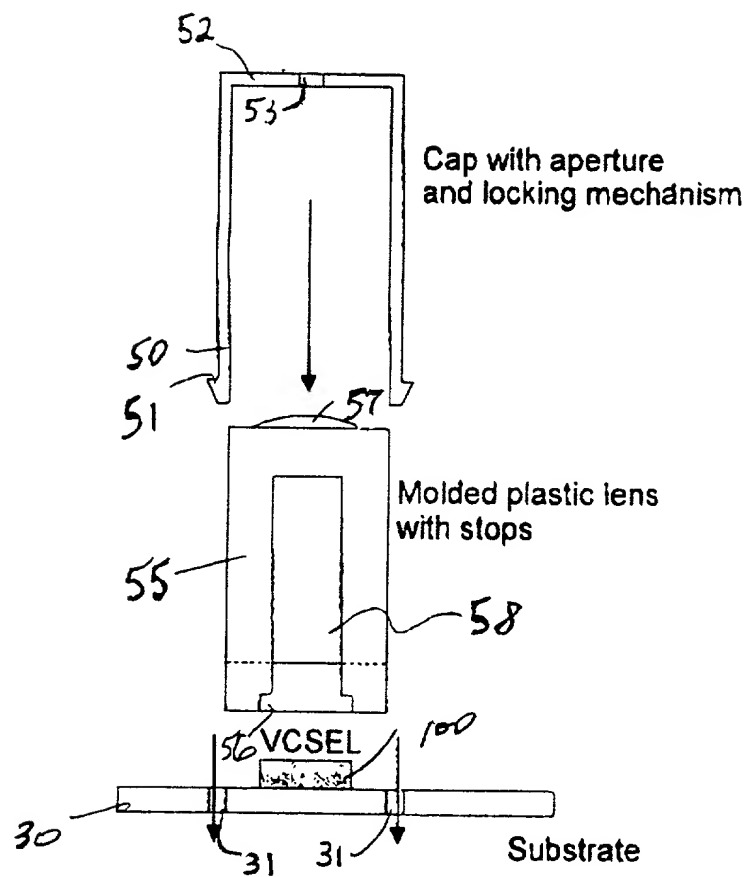


Fig. 5

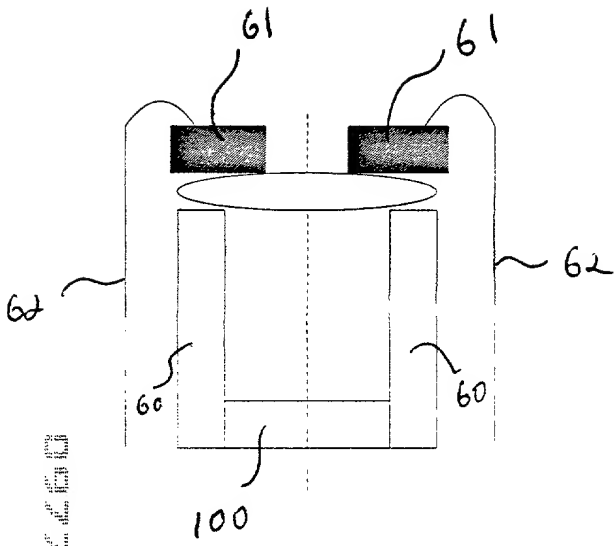


Fig. 6A

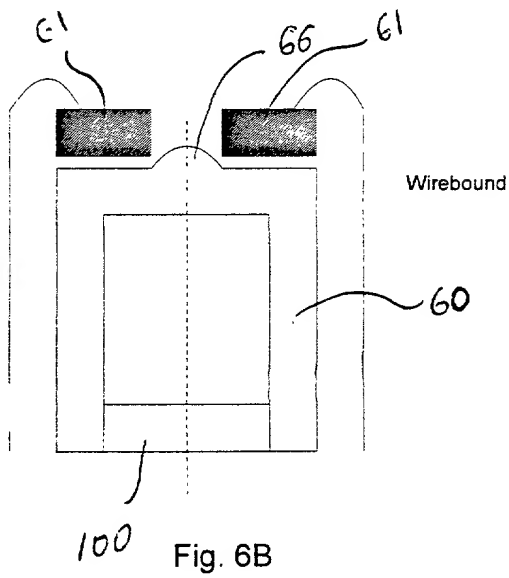


Fig. 6B

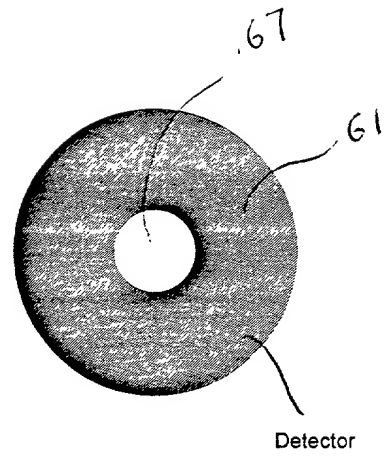


Fig. 6C

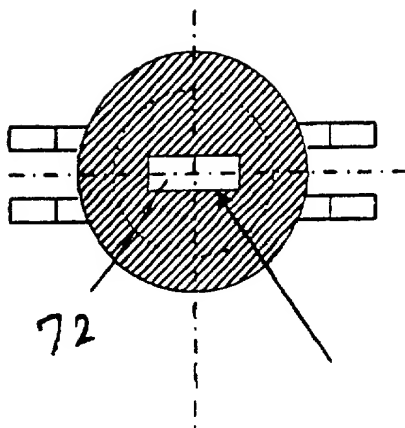


Fig. 7B

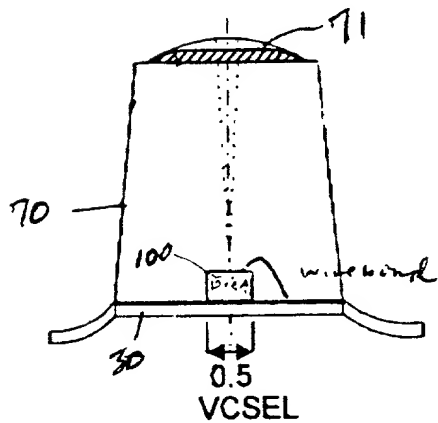


Fig. 7A

Fig. 7

0977036 036504

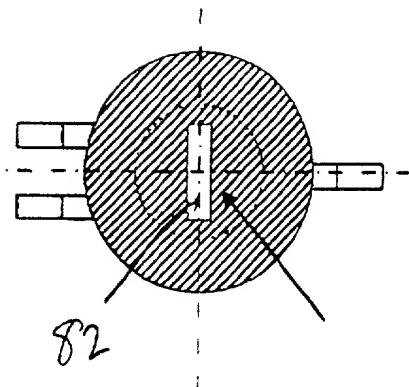


Fig. 8B

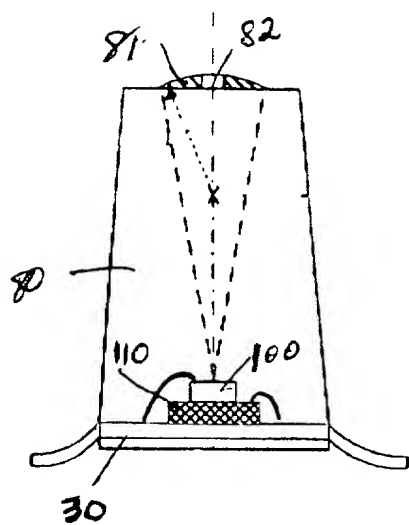


Fig. 8A

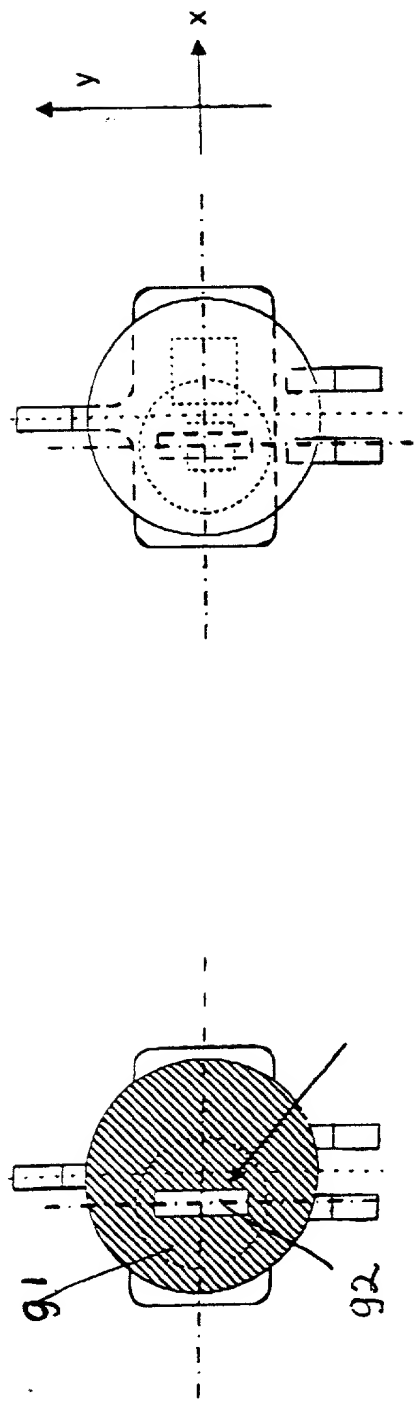


Fig. 9B

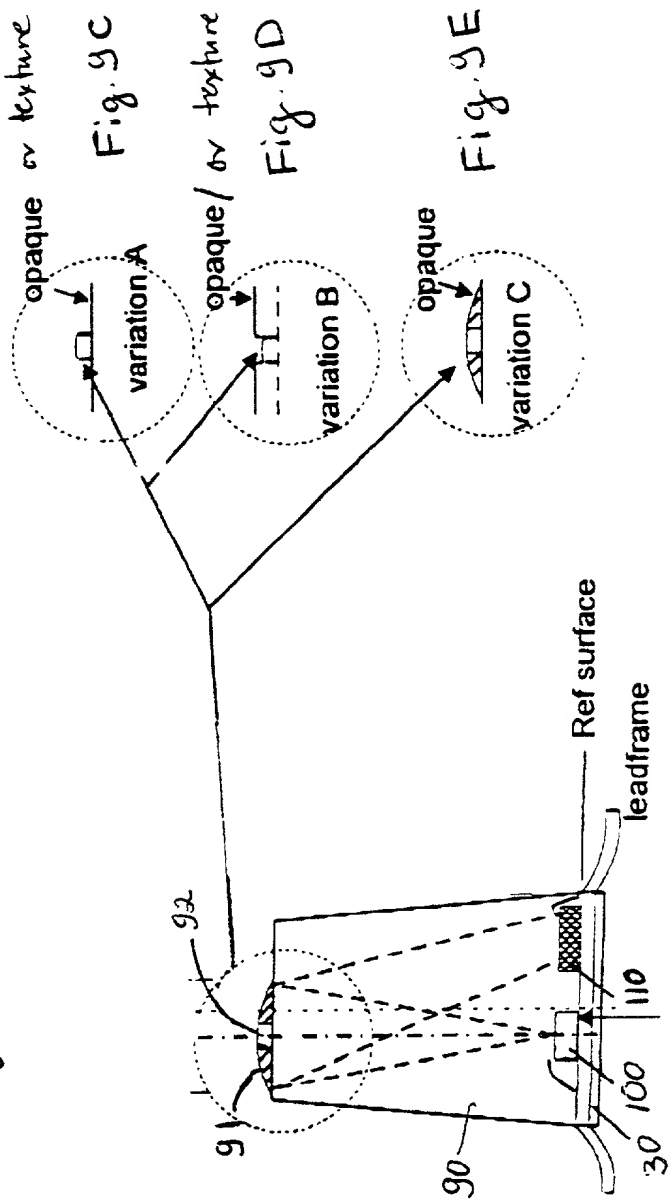


Fig 9A

System integration - flip chip

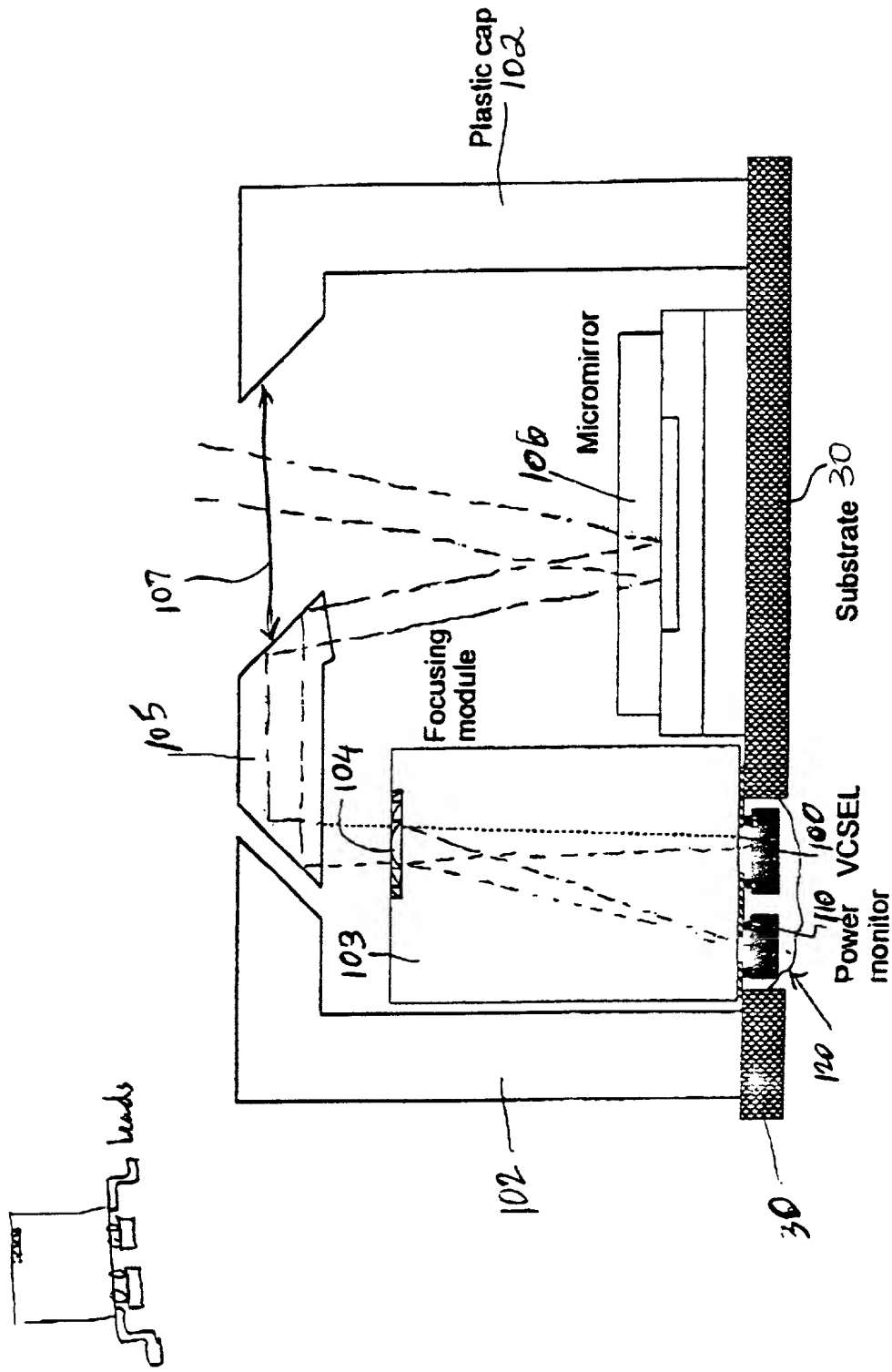
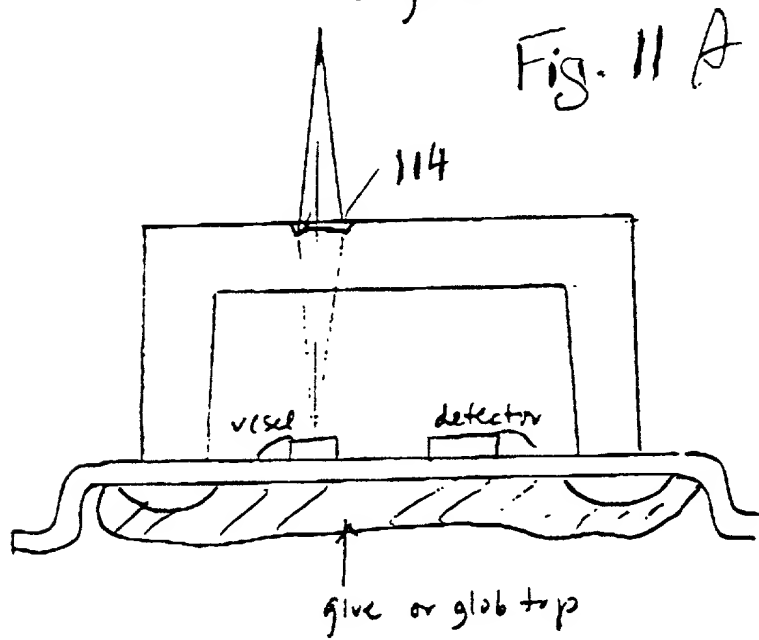
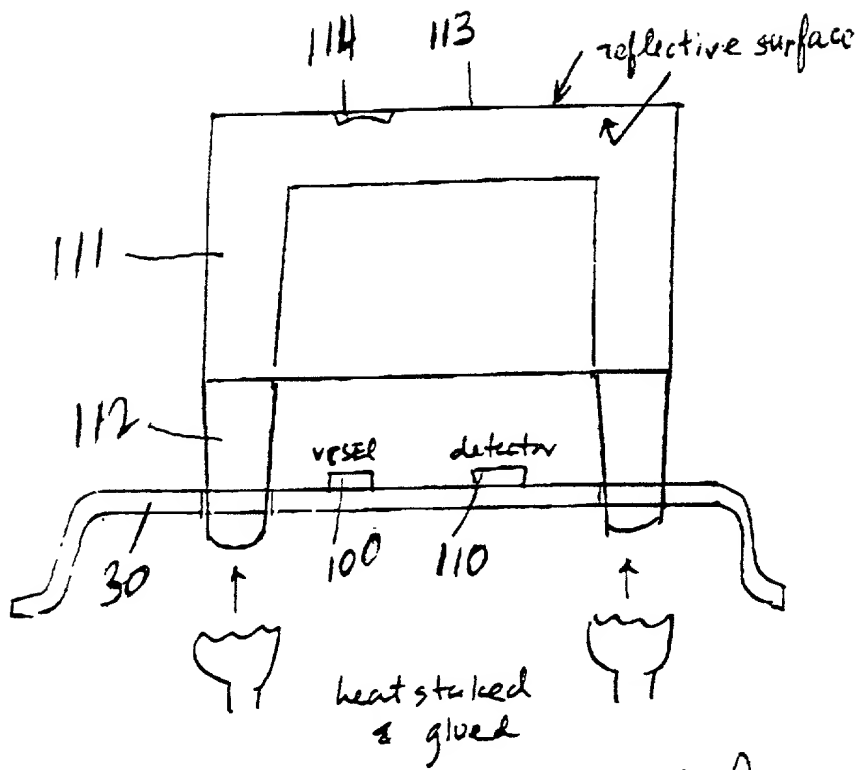


Fig.10



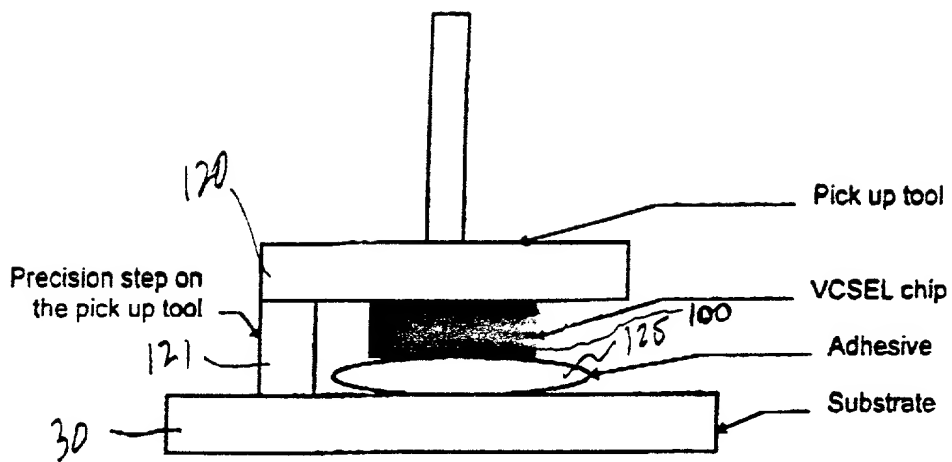


Fig. 12A

Precision step on pick and place tool

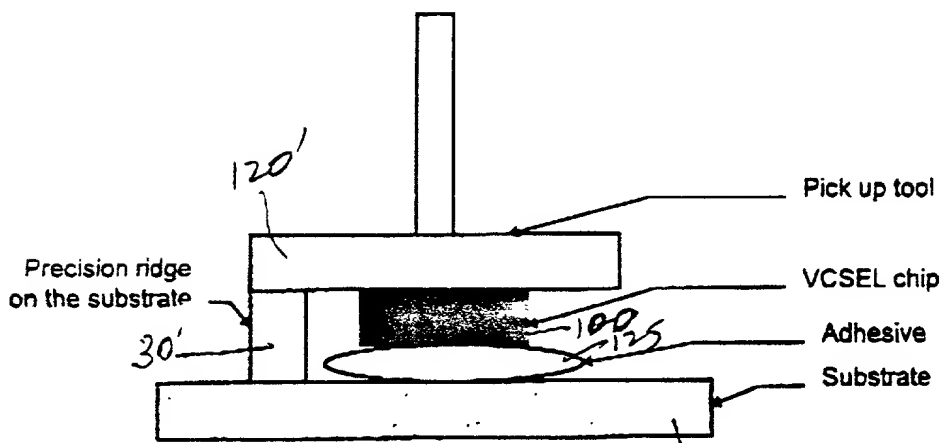


Fig. 12B

Precision ridge on the substrate

Retro-reflective integrated scanner

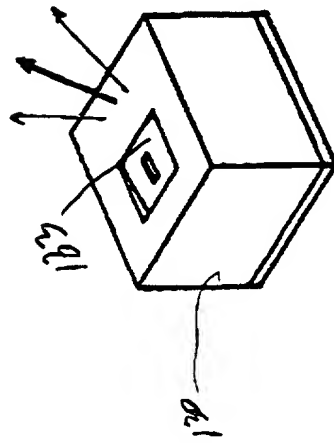


Fig. 13A

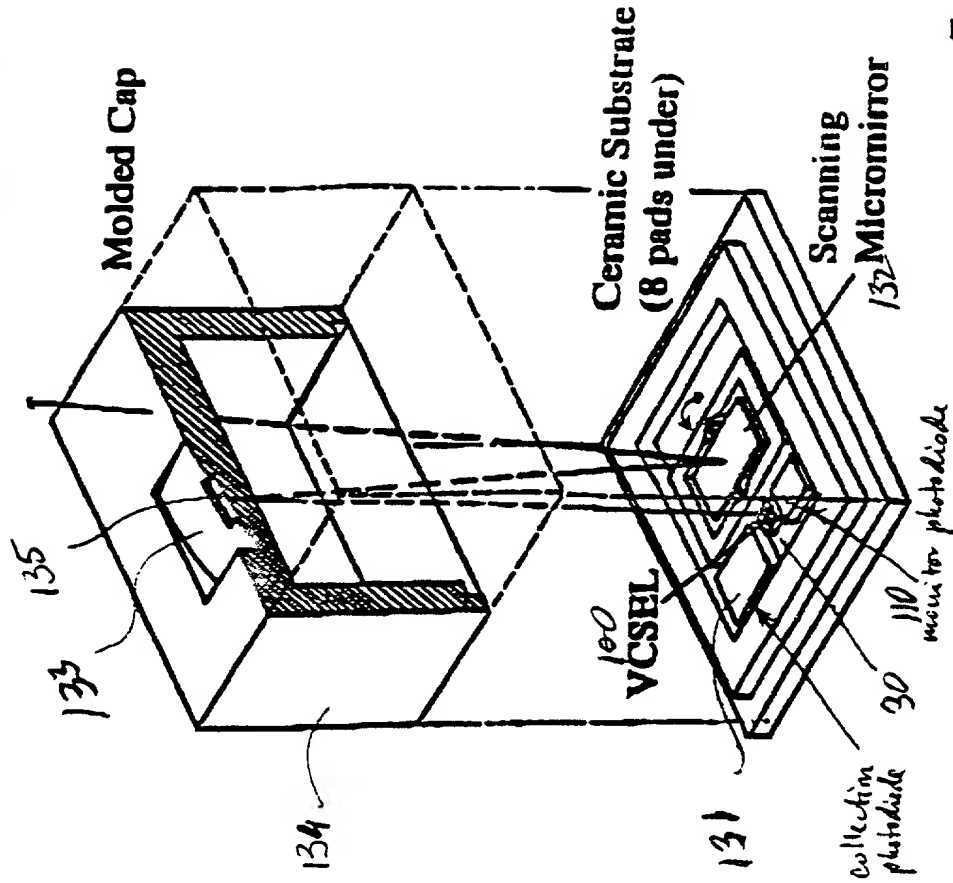


Fig. 13B

Fig. 14C

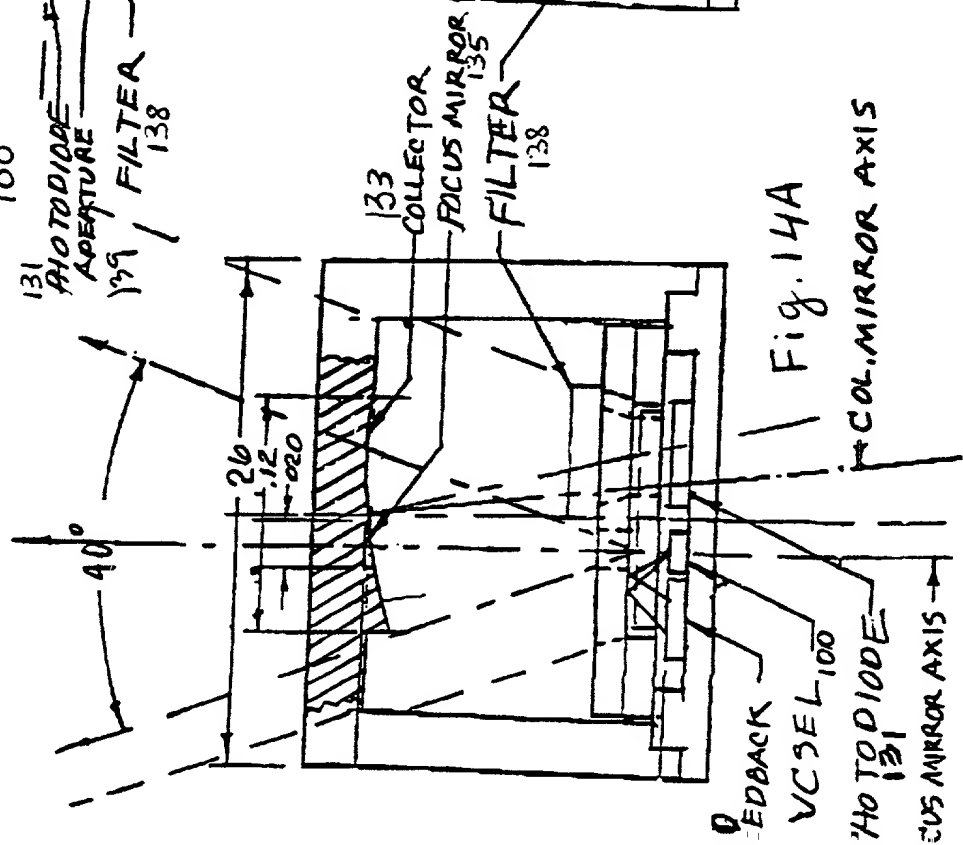
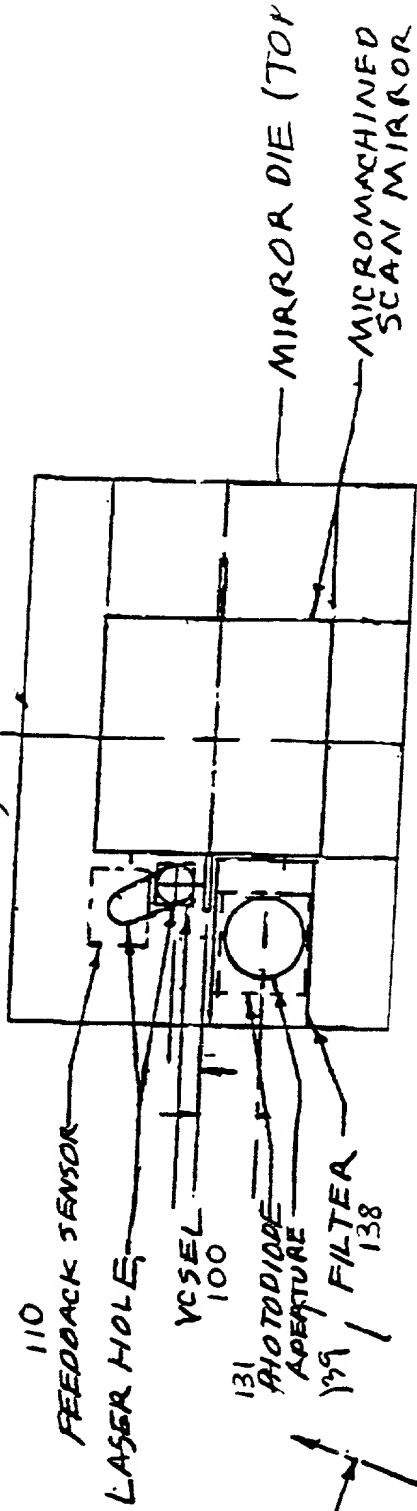


Fig. 14A

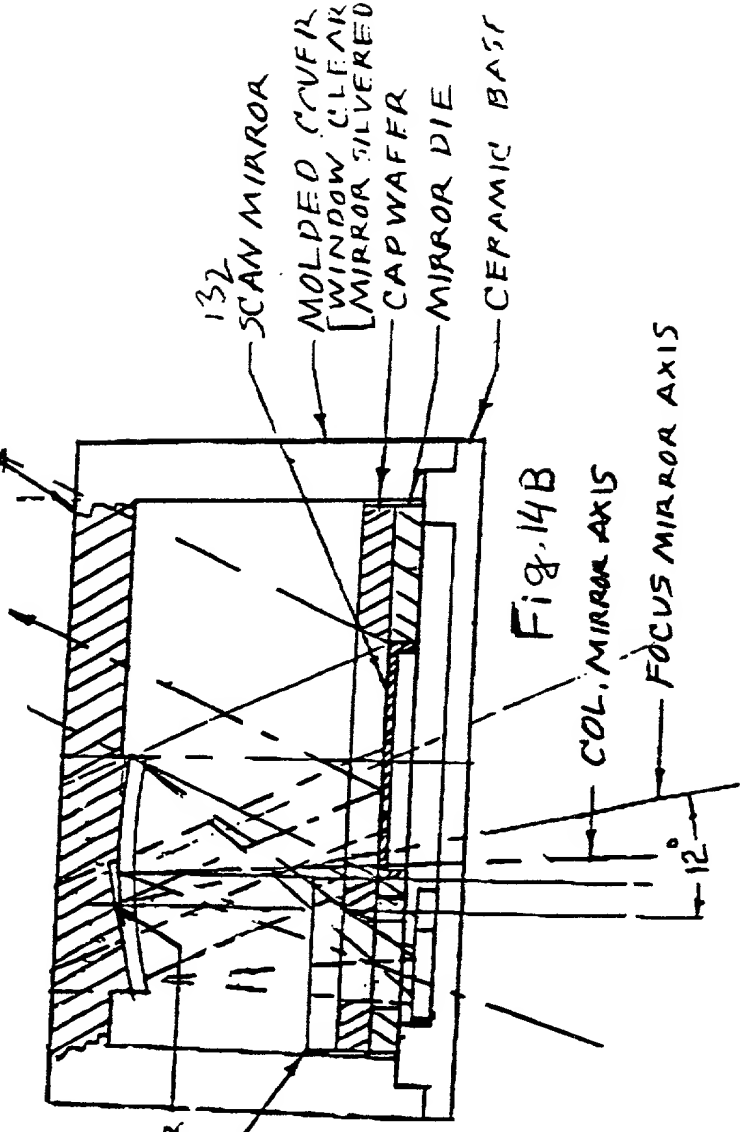


Fig. 14B

Patented 9-22-2009

Retro-reflective integrated scanner

(Non-smiling arrangement)

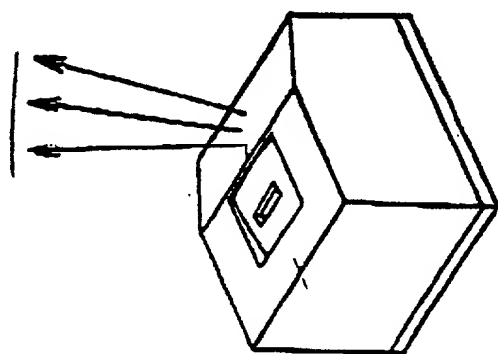


Fig. 15A

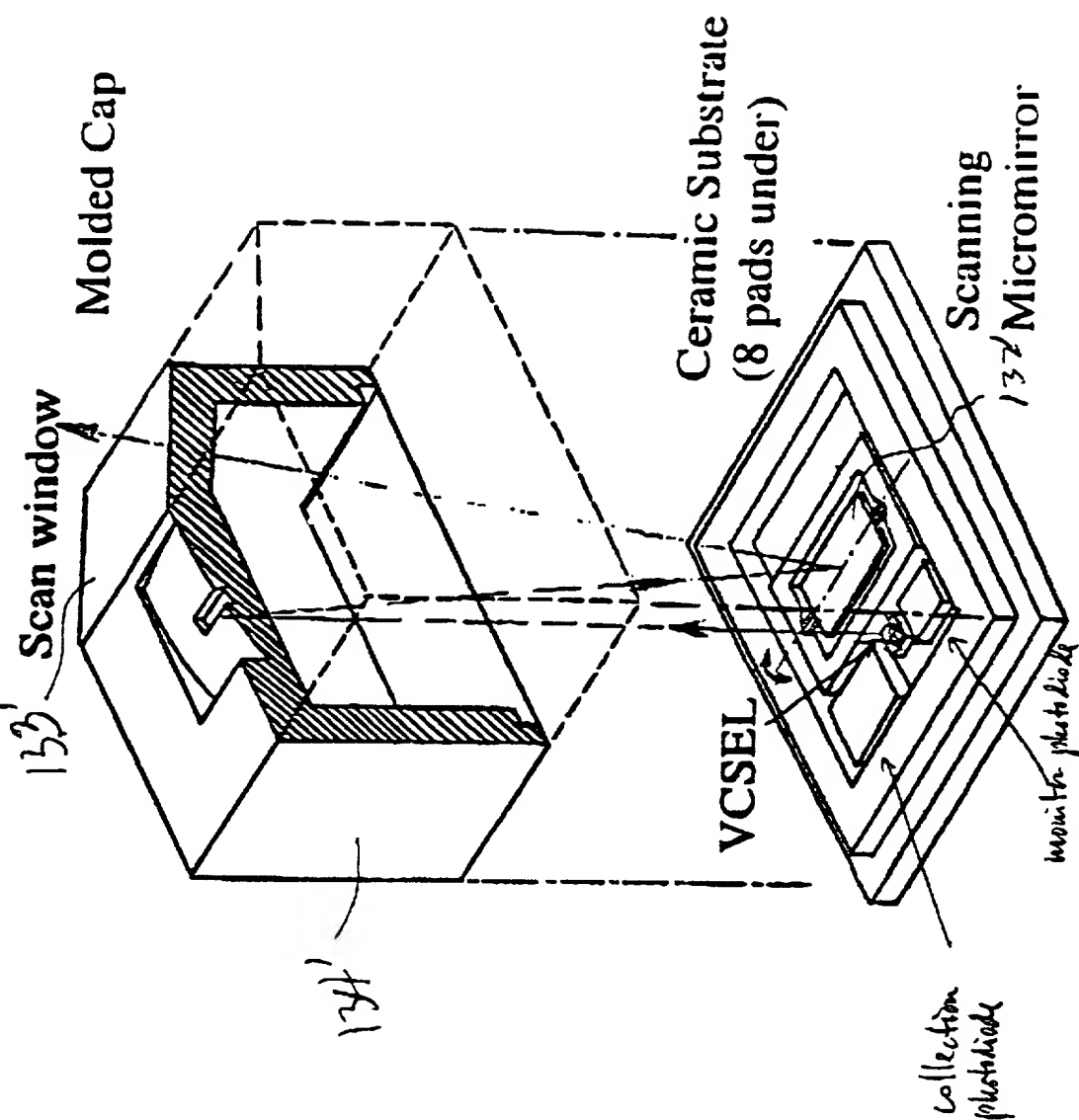
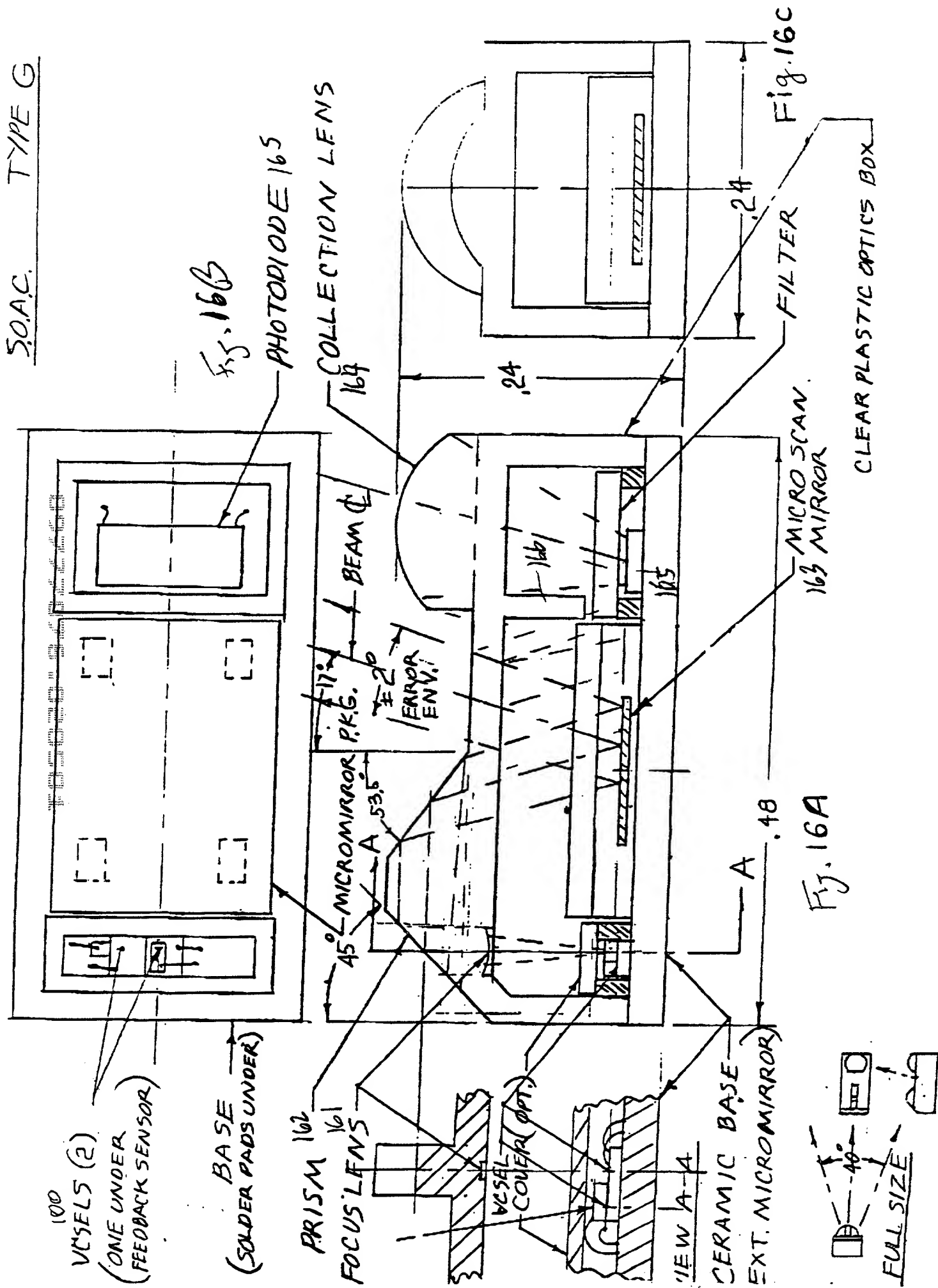


Fig. 15B



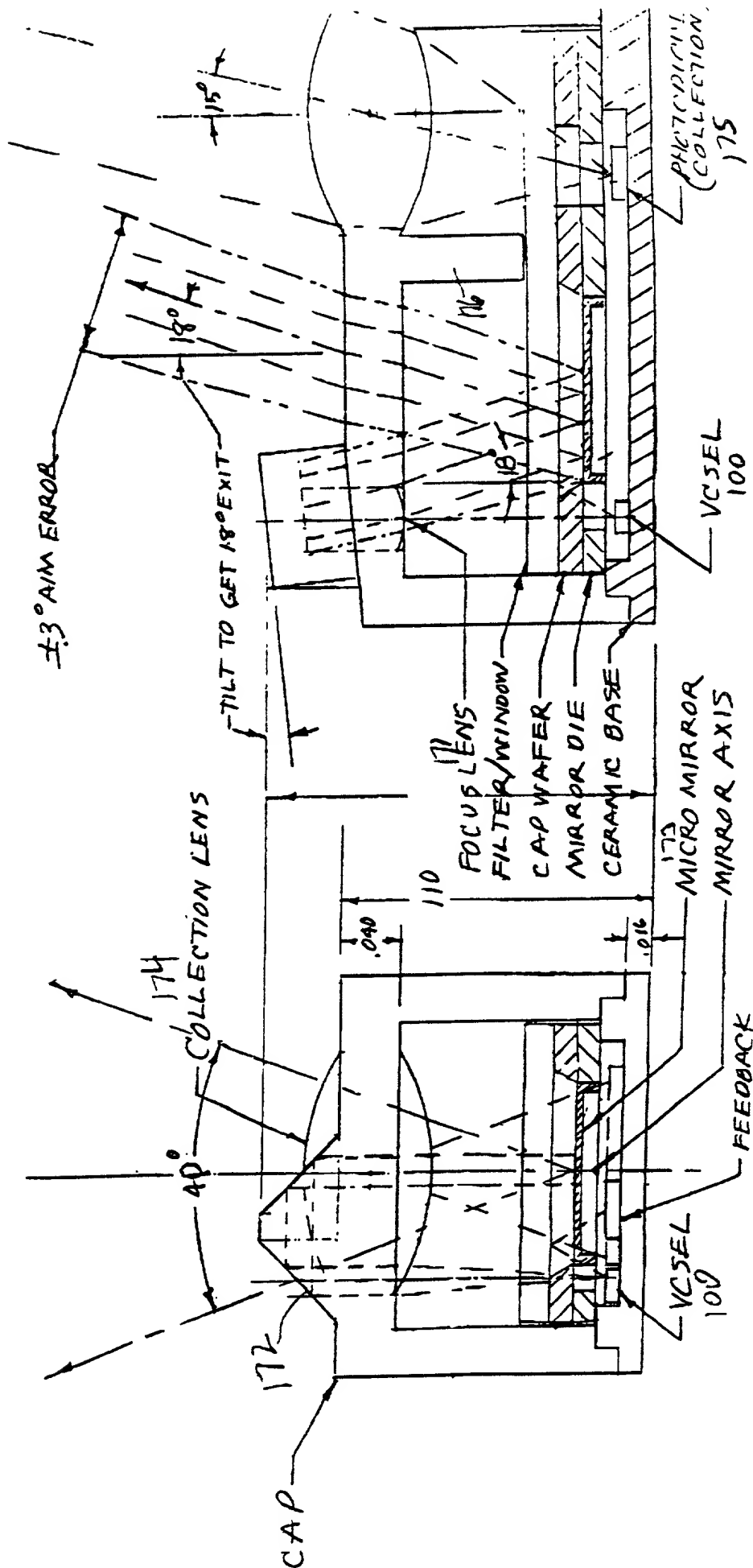


Fig. 170A

Fig. 170B

Other product possibilities - Handspring

SOAC. MODULE FOR HANDSPRINGS - 1 to 7 MILEY

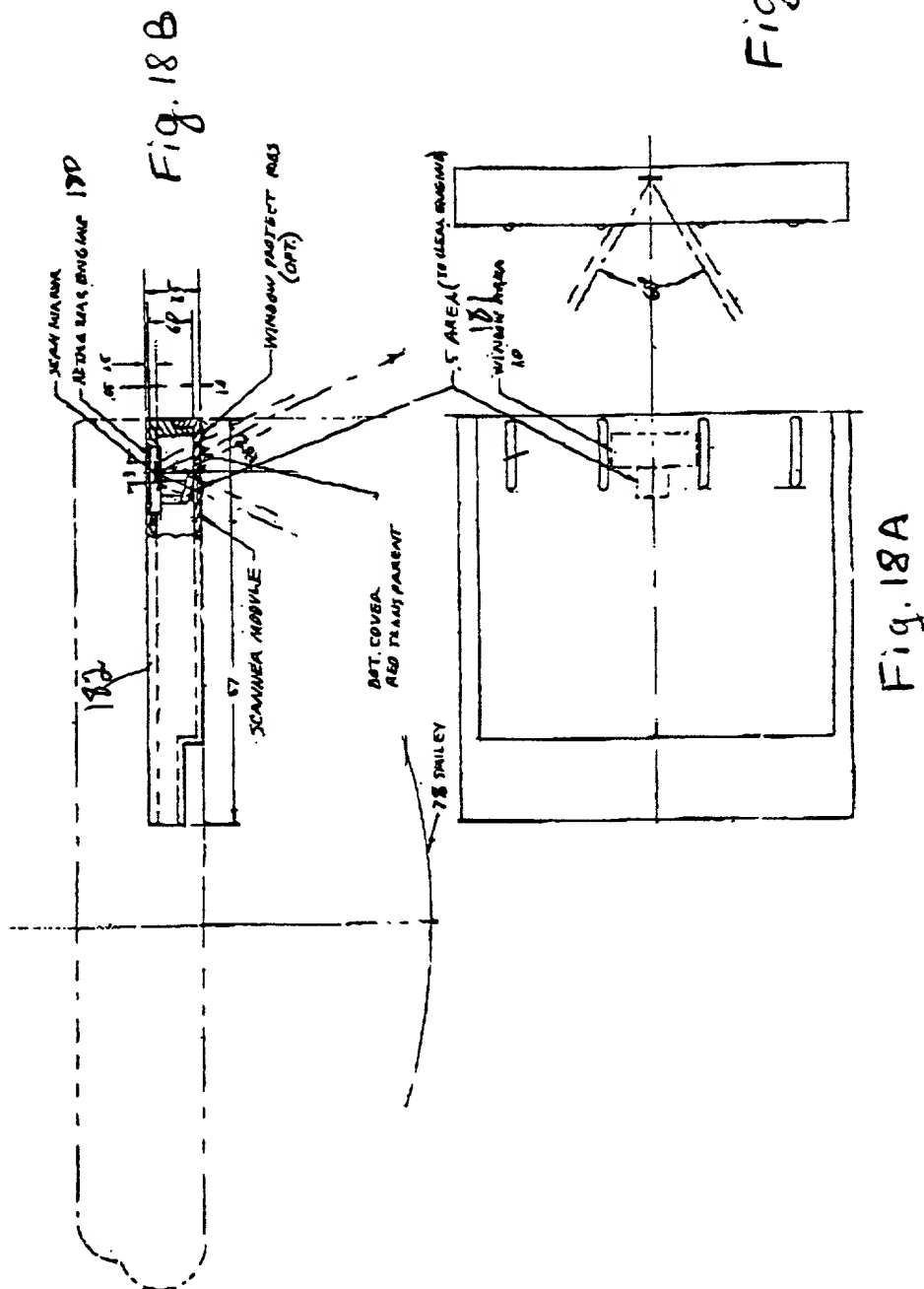


Fig. 18C

Fig. 18A

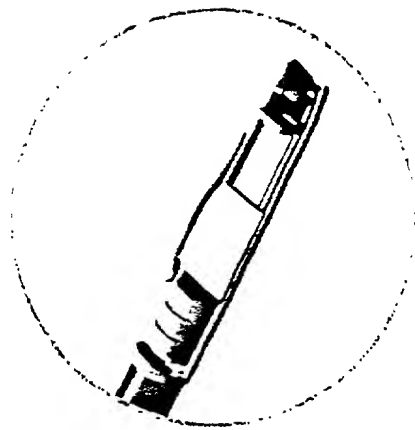
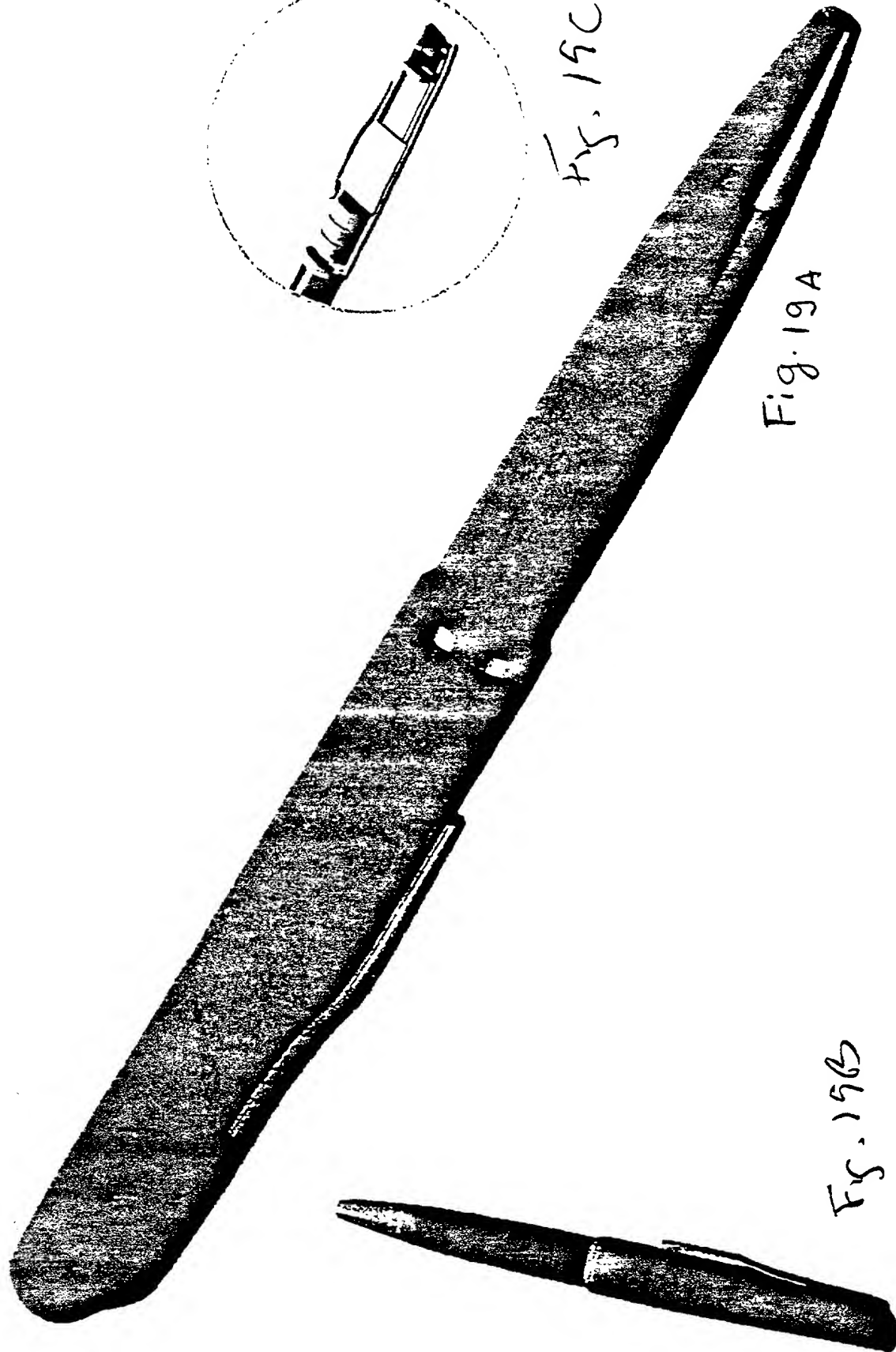


Fig. 19C



Fig. 19B



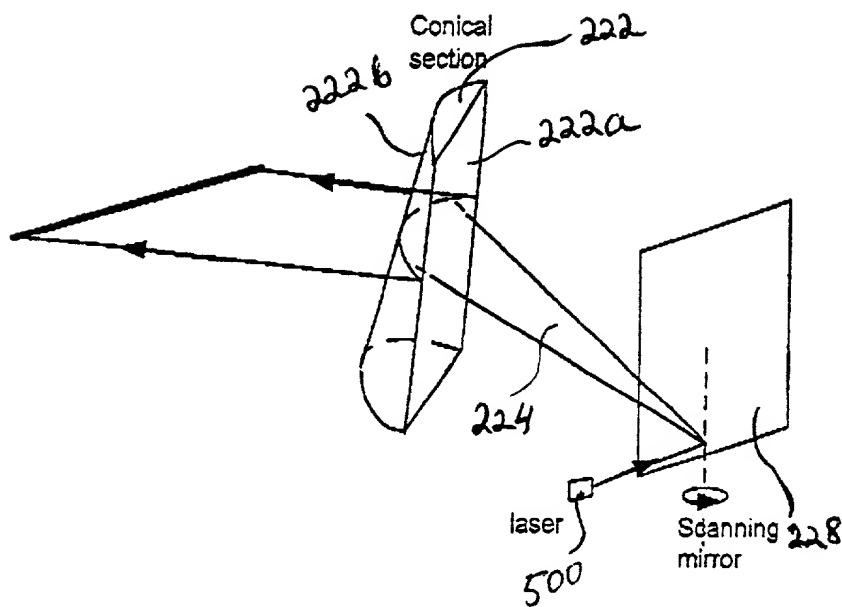


Fig. 22

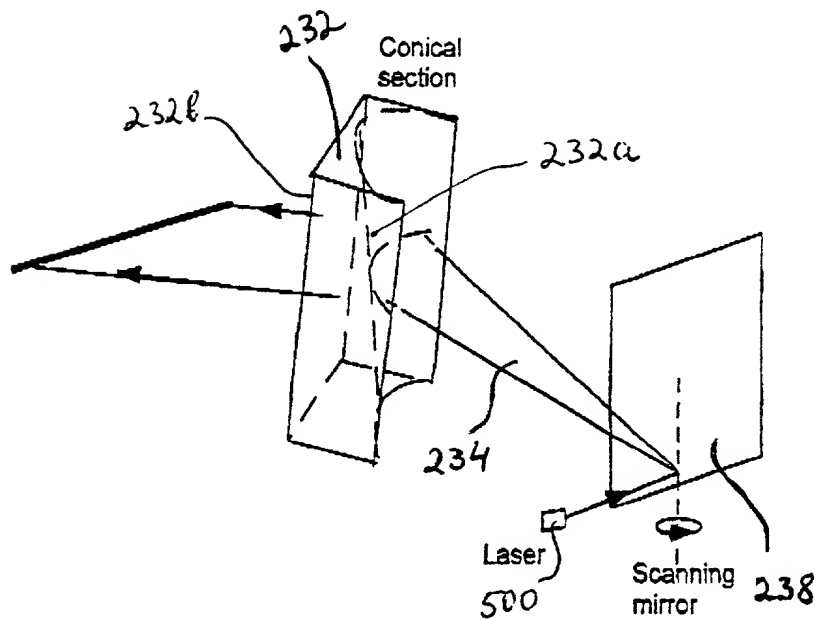


Fig. 23

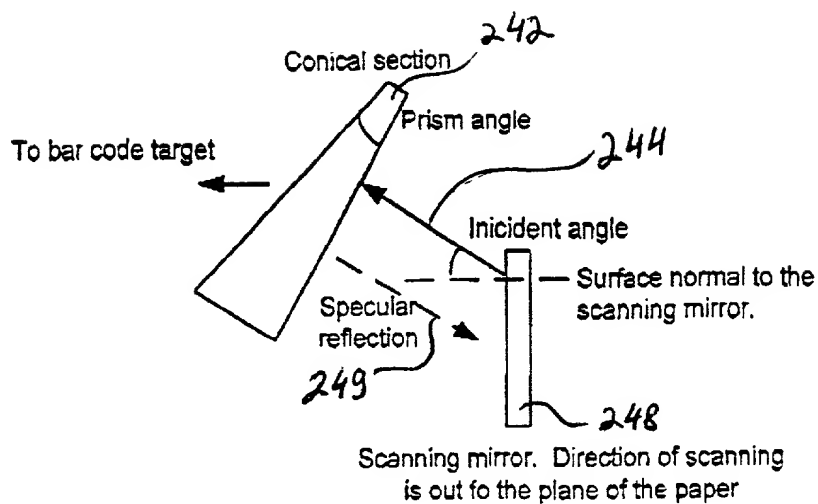


Fig. 24

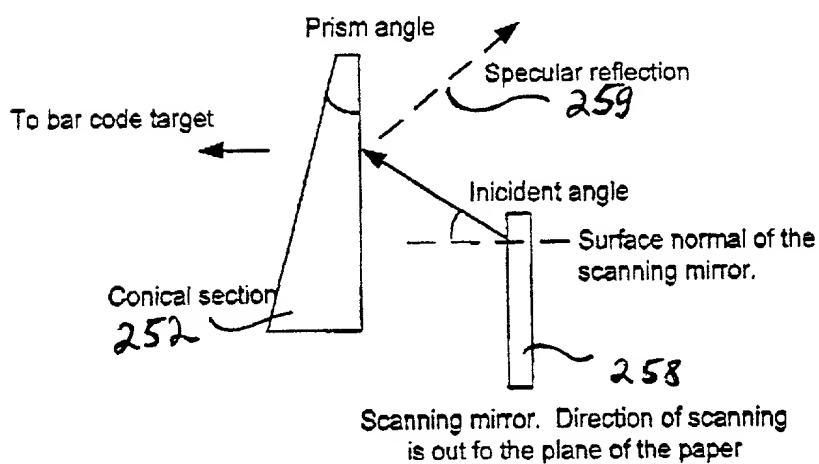
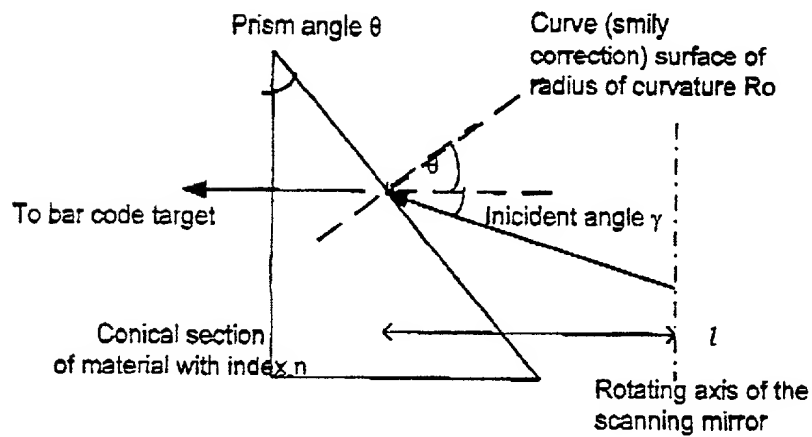
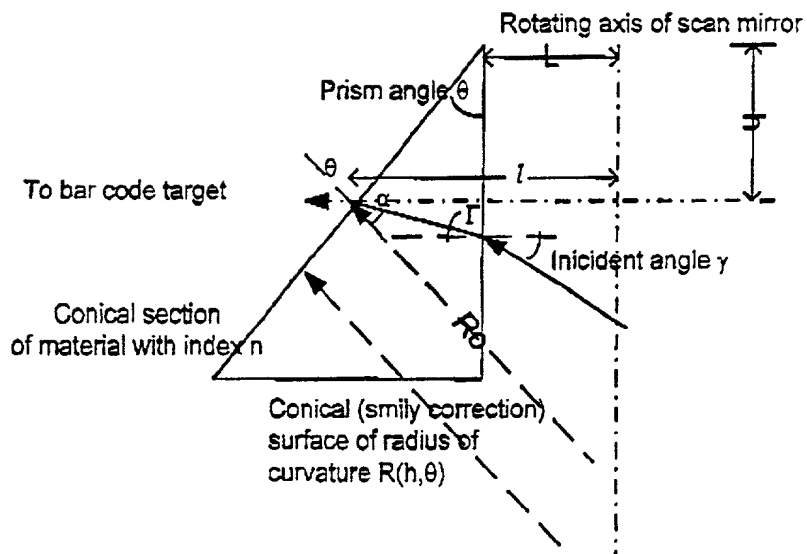


Fig. 25



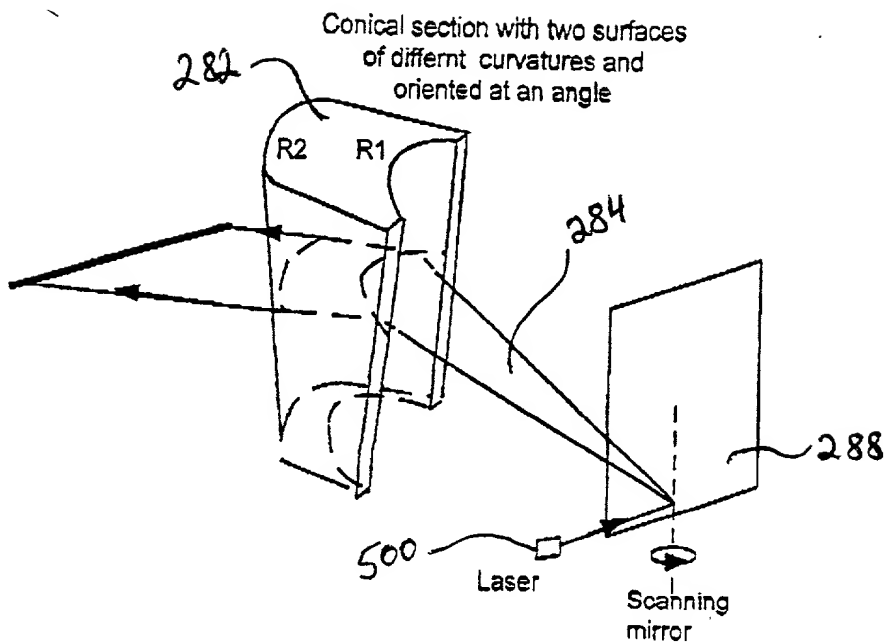


Fig. 28

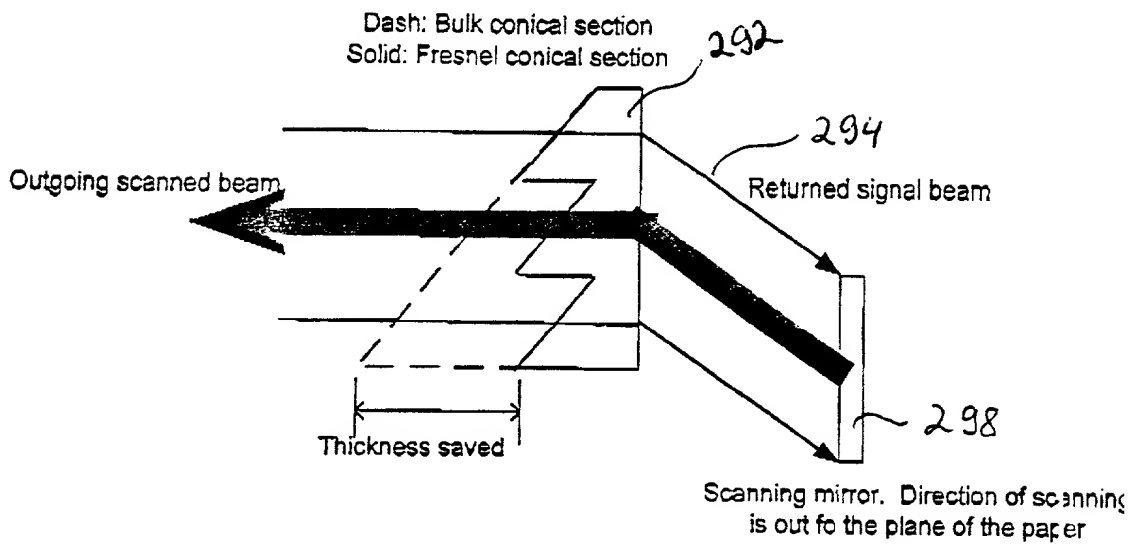


Fig. 29

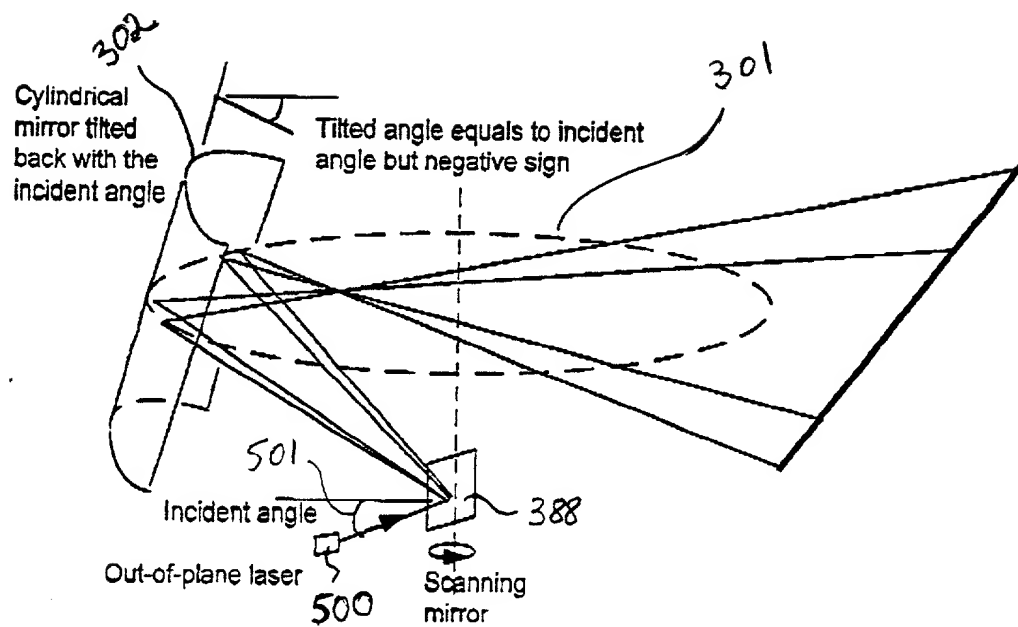


Fig. 30

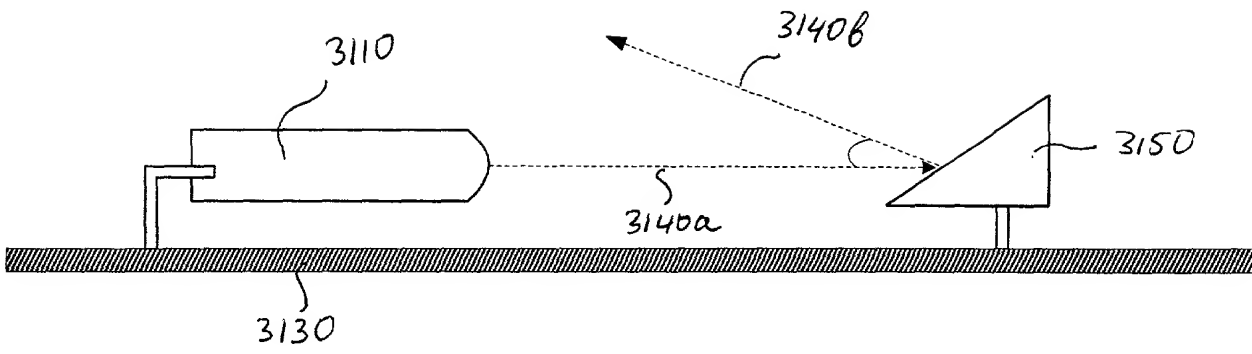


Fig. 31

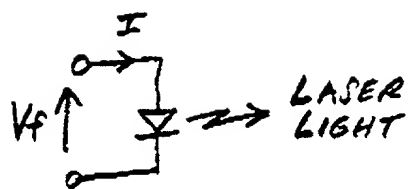


Fig. 32 a

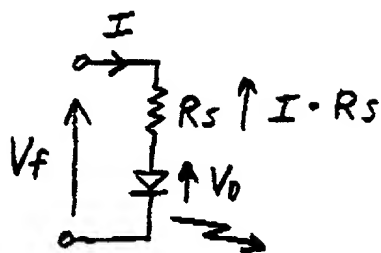


Fig. 32 b

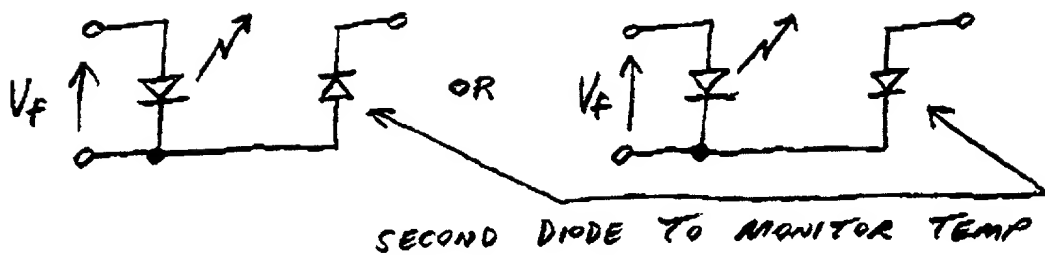


Fig. 32 c

FIG. 33 is a perspective view of a package 330, 332a, 332b, 333, 335, 336, 337, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

accommodates 6 to 10 deg smiley, 10 deg smiley shown

Placement tolerance: z: +/- 0.025 mm

x, y: +/- 0.050 mm

laser pointing error : +/- 4 deg

cap angular error due to placement: +/- 0.4 deg

cap prism error: +/- 0.5 deg

Cap feature tolerance: +/-0.025 mm

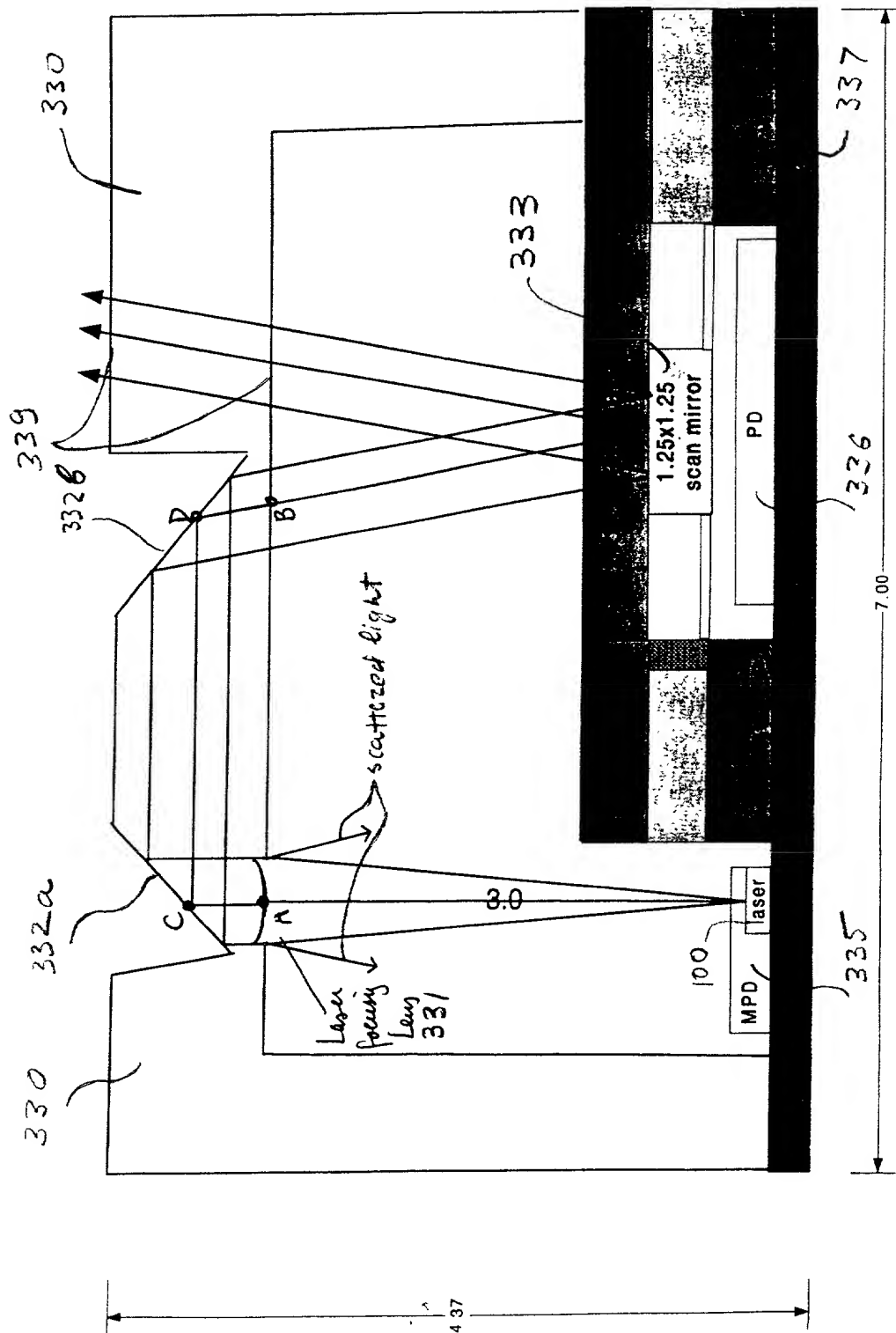


Fig. 33

FIG. 34
 Package: 3.5 H x 6.5 L x 7 W mm, (~9/64x1/4x9/32 in)
 (0.019" (12mm) collection area)

15 deg smiley shown

Placement tolerance: z: +/- 0.025 mm

x, y: +/- 0.050 mm

laser pointing error: +/- 4 deg

cap angular error due to placement: +/- 0.4 deg

cap prism error: +/- 0.5 deg shown, 0.1 desired

Cap feature tolerance: +/- 0.05 mm

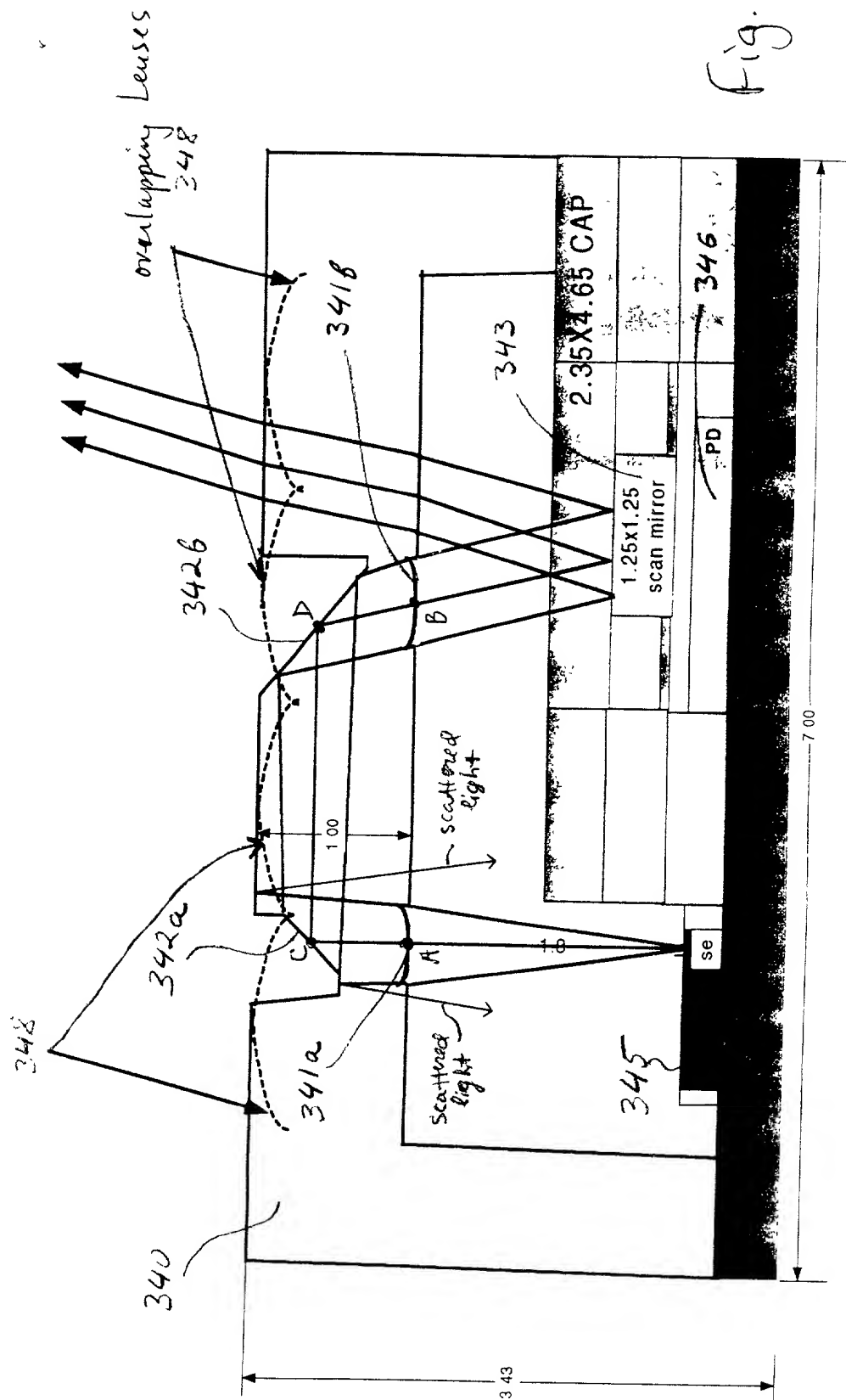


Fig. 34

Package: 4.5 H x 7.5 L x 7.5 W mm, (~3/16x9/32x9/32 in,
2x4 mm PD, 3 sq mm collection area)

accommodates 6 to 10 deg smiley, 10 deg smiley shown

Placement tolerance: z: +/- 0.025 mm

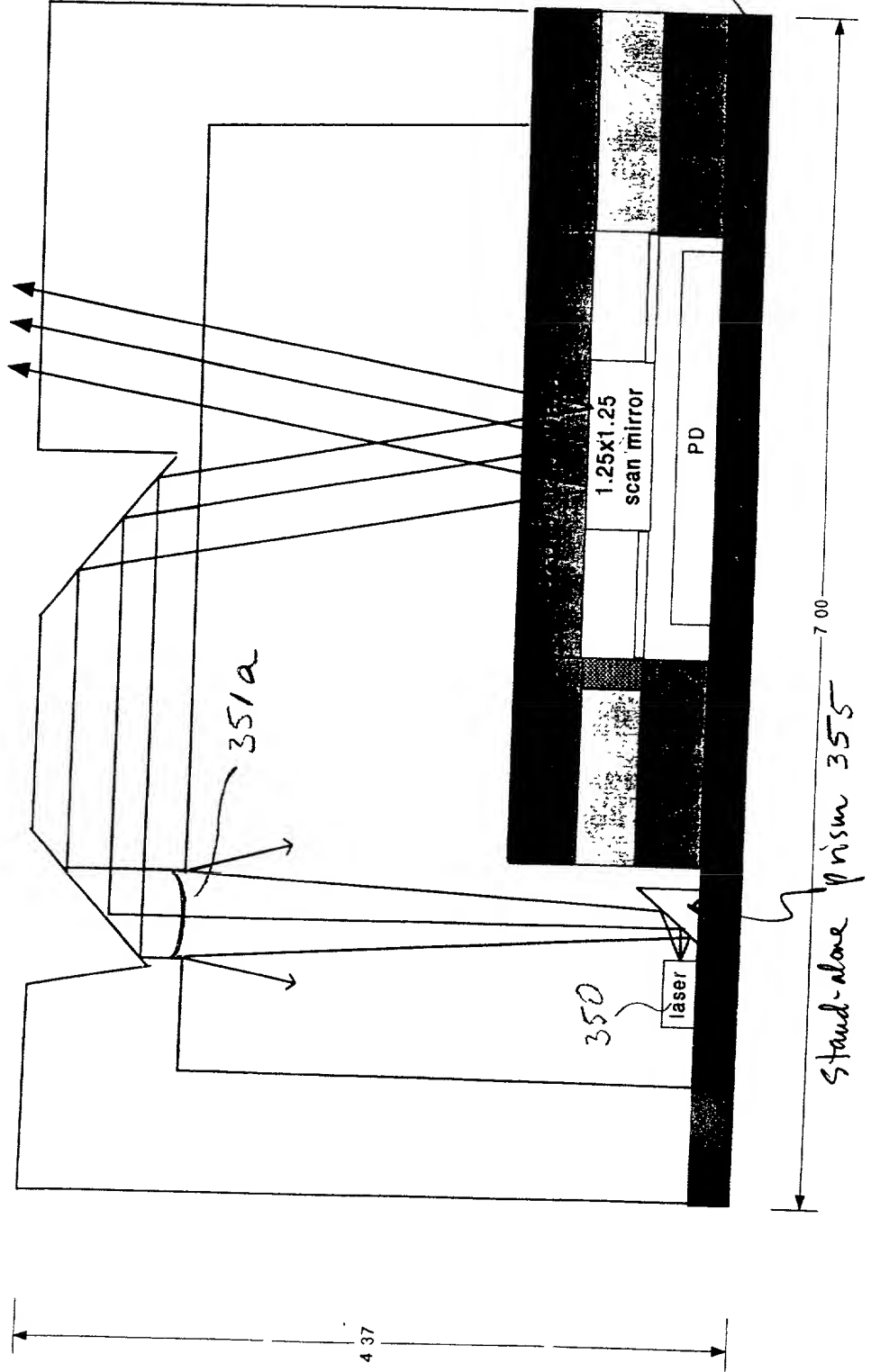
x, y: +/- 0.050 mm

laser pointing error: +/- 4 deg

cap angular error due to placement: +/- 0.4 deg

cap prism error: +/- 0.5 deg

Cap feature tolerance: +/- 0.025 mm



Package: 4.5 H x 7.5 L x 7.5 W mm, (~3/16x9/32x9/32 in)
 (2x1 mm PD, 3 sq mm collection area)

accommodates 6 to 10 deg smiley, 10 deg smiley shown

- Placement tolerance: z: +/- 0.025 mm
- x, y: +/- 0.050 mm
- laser pointing error: +/- 4 deg
- cap angular error due to placement: +/- 0.4 deg
- cap prism error: +/- 0.5 deg
- Cap feature tolerance: +/- 0.025 mm

